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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,469	12/15/2003	Andreas Gruhle	3926.062	3488

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EXAMINER	
WALK, SAMUEL J	

ART UNIT	PAPER NUMBER
2632	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/736,469	GRUHLE ET AL.	
	Examiner	Art Unit	
	Samuel J. Walk	2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/26/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. In the Preliminary Amendment filed 12/15/2003, Claims 1-14 have been cancelled and Claims 15-34 have been added; therefore, Claims 15-34 remain pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 15-16, 19-20, 23-25, 27-29 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aab (US 5500585) in view of Brown (US 4506218).

In reference to Claim 15, Aab discloses a device for detecting the speed and direction of a movable component using a single signal line wherein claimed antenna is met by magnetic field sensitive element 33; claimed analysis unit is met by signal processing arrangement 29, see Col. 4 lns 31-47. It would be advantageous to provide means of detection and indication of inadequate speed. Aab does not disclose

indication of failure or speed inadequacy. However, Brown teaches of a condition sensing arrangement for AC machines wherein a Hall effect switch determines abnormalities from magnetic field strength and in turn actuates indicator circuit 38, see Col. 4 lns 48-57. Therefore, one having ordinary skill in the art at the time the invention was made would have incorporate the teachings of Brown into the system of Aab because indication a malfunction or failure provides faster response time for repair.

In reference to Claim 16, Brown further teaches the applicability includes but is not limited to motor driven air moving devices, see Col. 2 lns 3-4.

In reference to Claims 19-20, Aab further discloses that signal processing arrangement 29 includes amplifier circuits, comparators, filter circuits and driver circuits, see Col. 8 lns 17-19.

In reference to Claims 23-25, Aab does not disclose the operating frequency range of the bandpass filter. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust, tweak and tune electrical components to optimize circuit performance.

In reference to Claim 27, Brown further teaches that indicator circuit 38 includes LED 44, see Col. 5 lns 1-8.

In reference to Claim 28, Aab further discloses that first component 10, which includes control arrangement 12 and evaluation arrangement 13, and second component 11, which includes electric motor 14 and sensor arrangement 15, are remotely spaced, see Col. 3 lns 60-67. Aab also discloses that sensor arrangement 15 includes magnetic field sensitive elements 33,34 and signal processing arrangement 29. Therefore, if the sensor arrangement 15 is to be remotely separated, then it would have been obvious to on e having ordinary skill in the art at the time the invention was made to contain it in a portable housing to allow for easier installation and/or replacement.

In reference to Claim 29, see above rejection in reference to Claim 28. In addition, if the sensor arrangement 15 includes portable housing, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a separate power source such as a battery.

In reference to Claim 33, see above rejection in reference to Claim 15.

In reference to Claim 34, see above rejection in reference to Claim 16.

4. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aab in view of Brown and in further view of Nienhuis (NPL: Physiology and Behavior).

In reference to Claim 17, the combined system of Aab and Brown disclose a Hall effect based system with at least 2 position sensors, see Aab, Col. 2 ln 16 and Col. 4 lns 31-47. Aab and Brown do not specifically disclose that the magnetic field sensitive elements 33,34 are coils. However, Nienhuis discloses an analysis of head movement and position using Hall effect devices wherein the Hall effect movement detector system consists of a magnet, sensors, amplifiers and computing means. The sensors include antenna coil cores for flux collectors, pg. 199 paragraphs labeled Method and Sensors. Therefore, one having ordinary skill in the art at the time the invention was made would have incorporate the teachings of Nienhuis into the system of Aab and Brown because antenna coils are functionally equivalent and readily available components.

In reference to Claim 18, Aab further discloses that utilizing at least two position sensors realizes a greater strength against interference signals and therefore, one having ordinary skill in the art at the time the invention was made would have readily recognized that the most optimum method of

interference reduction with multiple sensors would incorporate locating the sensors in different spatial directions.

5. Claim 21-22, 26 and 31-32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aab in view of Brown and in further view of Smith (US 5523701).

In reference to Claim 21, see above rejection in reference to Claim 20. Aab and Brown do not specifically disclose bandpass filtering in the signal processing arrangement 29. However, Smith teaches of bandpass filtering both before and after demodulation, see Col. 4 lns 5-6. Therefore, one having ordinary skill in the art at the time the invention was made would have incorporated the teachings of Smith into the system of Aab and Brown because bandpass filtering would reduce the unwanted noise.

In reference to Claim 22, see above rejection in reference to Claim 21. In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made that if multiple sensors were being used, then multiple bandpass filters would be used as well and that the filters would be adjustable or switchable to adjust, tweak and tune the electrical components to optimize circuit performance.

In reference to Claim 26, Aab and Brown disclose a system for monitoring the functionality of a motor. Aab and Brown do not disclose evaluating a logarithmic received signal. However, Smith discloses a method and apparatus for monitoring machine performance wherein processing of a DC or AC motor is performed utilizing logarithmic converters, see Col. 3 lns 55-67 and Col. 4 lns 1- 12. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Smith into the system of Aab and Brown so that the received signal would be properly analyzed in any format.

In reference to Claim 31, Aab and Brown do not specifically disclose digital processing. However, Smith teaches of A/D converter 50 and computer 52 for data processing, see Col. 3 lns 44-54. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Smith into the system of Aab and Brown because digital reduces noise.

In reference to Claim 32, see above rejection in reference to Claim 31.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lowery (US 5596271) discloses a method of and apparatus for detecting the rotation rate of an air-moving fan. Lipman (US 4949022) discloses a solid state DC fan motor. Furukawa (US 6009362) discloses an anomalous condition detecting apparatus for cooling motor fan. Dowling (US 6144924) discloses a motor condition and performance analyzer. Hiratsuka (US 5363024) discloses a DC fan control circuit device for linearly variable cooling.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel J. Walk whose telephone number is (571) 272-2960. The examiner can normally be reached on M-F: 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DANIEL WU
SUPERVISORY PATENT EXAMINER
5/28/05